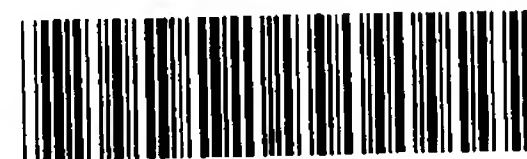


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RAW SEQUENCE LISTING  
 PATENT APPLICATION: US/10/038,224

DATE: 01/28/2002  
 TIME: 17:55:27

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 Output Set: N:\CRF3\01282002\J038224.raw

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3 <110> APPLICANT: Schewe et al  
 5 <120> TITLE OF INVENTION: Monocotyledon plant cells and plants which synthesise  
 modified starch

7 <130> FILE REFERENCE: 514413-3900  
 C--> 9 <140> CURRENT APPLICATION NUMBER: US/10/038,224

C--> 10 <141> CURRENT FILING DATE: 2001-10-19

12 <150> PRIOR APPLICATION NUMBER: DE 10052492.3

13 <151> PRIOR FILING DATE: 2000-10-23

15 <150> PRIOR APPLICATION NUMBER: DE 10064805.3

16 <151> PRIOR FILING DATE: 2000-12-22

18 <160> NUMBER OF SEQ ID NOS: 16

20 <170> SOFTWARE: PatentIn Ver. 2.1

22 <210> SEQ ID NO: 1

23 <211> LENGTH: 5061

24 <212> TYPE: DNA

25 <213> ORGANISM: Solanum tuberosum

27 <220> FEATURE:

28 <221> NAME/KEY: CDS

29 <222> LOCATION: (216)..(4607)

31 <400> SEQUENCE: 1

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36	cgaatttctc gacgcttctt cgctaatttc ctcgttactt cactagaaat cgacgtttct	180
38	agctgaactt gagtgaatta agccagtggg aggat atg agt aat tcc tta ggg	233
39		
40		
42	aat aac ttg ctg tac cag gga ttc cta acc tca aca gtg ttg gaa cat	281
43	Asn Asn Leu Leu Tyr Gln Gly Phe Leu Thr Ser Thr Val Leu Glu His	
44		
46	aaa agt aga atc agt cct cct tgt gtt gga ggc aat tct ttg ttt caa	329
47	Lys Ser Arg Ile Ser Pro Pro Cys Val Gly Gly Asn Ser Leu Phe Gln	
48		
50	caa caa gtg atc tcg aaa tca cct tta tca act gag ttt cga ggt aac	377
51	Gln Gln Val Ile Ser Lys Ser Pro Leu Ser Thr Glu Phe Arg Gly Asn	
52		
54	agg tta aag gtg cag aaa aag aaa ata cct atg gga aag aac cgt gct	425
55	Arg Leu Lys Val Gln Lys Lys Lys Ile Pro Met Gly Lys Asn Arg Ala	
56		
59	ttt tct agt tct cct cat gct gta ctt acc act gat acc tct tct gag	473
60	Phe Ser Ser Ser Pro His Ala Val Leu Thr Thr Asp Thr Ser Ser Glu	
61		
63	cta gca gaa aag ttc agt cta gaa ggg aat att gag cta cag gtt gat	521
64	Leu Ala Glu Lys Phe Ser Leu Glu Gly Asn Ile Glu Leu Gln Val Asp	
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71 aca aat ggt agt gat aaa ctg ttt ttg cac tgg ggg gca gta aag ttc 617
72 Thr Asn Gly Ser Asp Lys Leu Phe Leu His Trp Gly Ala Val Lys Phe
73      120      125      130
75 gga aaa gaa aca tgg tct ctt cct aat gat cgt cca gat ggg acc aaa 665
76 Gly Lys Glu Thr Trp Ser Leu Pro Asn Asp Arg Pro Asp Gly Thr Lys
77 135      140      145      150
79 gtg tac aag aac aaa gca ctt aga act cca ttt gtt aaa tct ggc tct 713
80 Val Tyr Lys Asn Lys Ala Leu Arg Thr Pro Phe Val Lys Ser Gly Ser
81      155      160      165
83 aac tcc atc ctg aga ctg gag ata cgg gac act gct atc gaa gct att 761
84 Asn Ser Ile Leu Arg Leu Glu Ile Arg Asp Thr Ala Ile Glu Ala Ile
85      170      175      180
87 gag ttt ctc ata tac gat gaa gcc tac gat aaa tgg ata aag aat aat 809
88 Glu Phe Leu Ile Tyr Asp Glu Ala Tyr Asp Lys Trp Ile Lys Asn Asn
89      185      190      195
91 ggt ggc aat ttt cgt gtc aaa ttg tca aga aaa gag ata cga ggc cca 857
92 Gly Gly Asn Phe Arg Val Lys Leu Ser Arg Lys Glu Ile Arg Gly Pro
93      200      205      210
95 gat gtt tca gtt cct gag gag ctt gta cag atc caa tca tat ttg agg 905
96 Asp Val Ser Val Pro Glu Glu Leu Val Gln Ile Gln Ser Tyr Leu Arg
97 215      220      225      230
99 tgg gag agg aag gga aaa cag aat tac acc cct gag aaa gag aag gag 953
100 Trp Glu Arg Lys Gly Lys Gln Asn Tyr Thr Pro Glu Lys Glu Lys Glu
101      235      240      245
103 gaa tat gag gct gct cga act gag cta cag gag gaa ata gct cgt ggt 1001
104 Glu Tyr Glu Ala Ala Arg Thr Glu Leu Gln Glu Glu Ile Ala Arg Gly
105      250      255      260
107 gct tcc ata cag gac att cga gca agg cta aca aaa act aat gat aaa 1049
108 Ala Ser Ile Gln Asp Ile Arg Ala Arg Leu Thr Lys Thr Asn Asp Lys
109      265      270      275
111 agt caa agc aaa gaa gag cct ctt cat gta aca aag agt gaa ata cct 1097
112 Ser Gln Ser Lys Glu Glu Pro Leu His Val Thr Lys Ser Glu Ile Pro
113      280      285      290
115 gat gac ctt gcc caa gca caa gct tac att agg tgg gag aaa gca gga 1145
116 Asp Asp Leu Ala Gln Ala Gln Ala Tyr Ile Arg Trp Glu Lys Ala Gly
117 295      300      305      310
120 aag ccg aac tat cct cca gaa aag caa att gaa gaa ctc gaa gaa gca 1193
121 Lys Pro Asn Tyr Pro Pro Glu Lys Gln Ile Glu Glu Leu Glu Glu Ala
122      315      320      325
124 aga aga gaa ttg caa ctt gag ctt gag aaa ggc att acc ctt gat gag 1241
125 Arg Arg Glu Leu Gln Leu Glu Leu Glu Lys Gly Ile Thr Leu Asp Glu
126      330      335      340
128 ttg cgg aaa aag att aca aaa ggg gag ata aaa act aag gcg gaa aag 1289
129 Leu Arg Lys Lys Ile Thr Lys Gly Glu Ile Lys Thr Lys Ala Glu Lys
130      345      350      355
132 cac gtg aaa aga agc tct ttt gcc gtt gaa aga atc caa aga aag aag 1337

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136	aga	gac	ttt	ggg	cag	ctt	att	aat	aag	tat	cct	tcc	agt	cct	gca	gta	1385
137	Arg	Asp	Phe	Gly	Gln	Leu	Ile	Asn	Lys	Tyr	Pro	Ser	Ser	Pro	Ala	Val	
138	375					380					385					390	
140	caa	gta	caa	aag	gtc	ttg	gaa	gaa	cca	cca	gcc	tta	tct	aaa	att	aag	1433
141	Gln	Val	Gln	Lys	Val	Leu	Glu	Glu	Pro	Pro	Ala	Leu	Ser	Lys	Ile	Lys	
142					395						400				405		
144	ctg	tat	gcc	aag	gag	aag	gag	gag	cag	att	gat	gat	ccg	atc	ctt	aat	1481
145	Leu	Tyr	Ala	Lys	Glu	Lys	Glu	Glu	Gln	Ile	Asp	Asp	Pro	Ile	Leu	Asn	
146				410					415					420			
148	aaa	aag	atc	ttt	aag	gtc	gat	gat	ggg	gag	cta	ctg	gta	ctg	gta	gca	1529
149	Lys	Lys	Ile	Phe	Lys	Val	Asp	Asp	Gly	Glu	Leu	Leu	Val	Leu	Val	Ala	
150			425						430					435			
152	aag	tcc	tct	ggg	aag	aca	aaa	gta	cat	ata	gct	aca	gat	ctg	aat	cag	1577
153	Lys	Ser	Ser	Gly	Lys	Thr	Lys	Val	His	Ile	Ala	Thr	Asp	Leu	Asn	Gln	
154		440					445						450				
156	cca	att	act	ctt	cac	tgg	gca	tta	tcc	aaa	agt	cgt	gga	gag	tgg	atg	1625
157	Pro	Ile	Thr	Leu	His	Trp	Ala	Leu	Ser	Lys	Ser	Arg	Gly	Glu	Trp	Met	
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161	Val	Pro	Pro	Ser	Ser	Ile	Leu	Pro	Pro	Gly	Ser	Ile	Ile	Leu	Asp	Lys	
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164	gct	gcc	gaa	aca	cct	ttt	tcc	gcc	agt	tct	tct	gat	ggt	cta	act	tct	1721
165	Ala	Ala	Glu	Thr	Pro	Phe	Ser	Ala	Ser	Ser	Ser	Asp	Gly	Leu	Thr	Ser	
166				490					495					500			
168	aag	gta	caa	tct	ttg	gat	ata	gta	att	gaa	gat	ggc	aat	ttt	gtg	ggg	1769
169	Lys	Val	Gln	Ser	Leu	Asp	Ile	Val	Ile	Glu	Asp	Gly	Asn	Phe	Val	Gly	
170			505					510					515				
172	atg	cca	ttt	gtt	ctt	ttg	tct	ggt	gaa	aaa	tgg	att	aag	aac	caa	ggg	1817
173	Met	Pro	Phe	Val	Leu	Leu	Ser	Gly	Glu	Lys	Trp	Ile	Lys	Asn	Gln	Gly	
174		520					525						530				
176	tcg	gat	ttc	tat	gtt	gac	ttc	agt	gct	gca	tcc	aaa	tta	gca	ctc	aag	1865
177	Ser	Asp	Phe	Tyr	Val	Asp	Phe	Ser	Ala	Ala	Ser	Lys	Leu	Ala	Leu	Lys	
178	535					540					545					550	
181	gct	gct	ggg	gat	ggc	agt	gga	act	gca	aag	tct	tta	ctg	gat	aaa	ata	1913
182	Ala	Ala	Gly	Asp	Gly	Ser	Gly	Thr	Ala	Lys	Ser	Leu	Leu	Asp	Lys	Ile	
183					555					560					565		
185	gca	gat	atg	gaa	agt	gag	gct	cag	aag	tca	ttt	atg	cac	cgg	ttt	aat	1961
186	Ala	Asp	Met	Glu	Ser	Glu	Ala	Gln	Lys	Ser	Phe	Met	His	Arg	Phe	Asn	
187			570						575					580			
189	att	gct	gct	gac	ttg	ata	gaa	gat	gcc	act	agt	gct	ggt	gaa	ctt	ggt	2009
190	Ile	Ala	Ala	Asp	Leu	Ile	Glu	Asp	Ala	Thr	Ser	Ala	Gly	Glu	Leu	Gly	
191			585					590					595				
193	ttt	act	gga	att	ctt	gta	tgg	atg	agg	ttc	atg	gct	aca	agg	caa	ctg	2057
194	Phe	Thr	Gly	Ile	Leu	Val	Trp	Met	Arg	Phe	Met	Ala	Thr	Arg	Gln	Leu	
195		600					605					610					
197	ata	tgg	aac	aaa	aac	tat	aac	gta	aaa	cca	cgt	gaa	ata	agc	aag	gct	2105
198	Ile	Trp	Asn	Lys	Asn	Tyr	Asn	Val	Lys	Pro	Arg	Glu	Ile	Ser	Lys	Ala	

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202	Gln Asp Arg Leu Thr Asp Leu Leu Gln Asn Ala Phe Thr Ser His Pro							
203		635		640		645		
205	caa tac cgt gaa att ttg cgg atg att atg tca act gtt gga cgt gga	2201						
206	Gln Tyr Arg Glu Ile Leu Arg Met Ile Met Ser Thr Val Gly Arg Gly							
207		650		655		660		
209	ggt gaa ggg gat gta gga cag cga att agg gat gaa att ttg gtc atc	2249						
210	Gly Glu Gly Asp Val Gly Gln Arg Ile Arg Asp Glu Ile Leu Val Ile							
211		665		670		675		
213	cag agg aaa aat gac tgc aag ggt ggt atg atg gaa gaa tgg cat cag	2297						
214	Gln Arg Lys Asn Asp Cys Lys Gly Gly Met Met Glu Glu Trp His Gln							
215		680		685		690		
217	aaa ttg cat aat aat act agt cct gat gat gtt gtg atc tgt cag gca	2345						
218	Lys Leu His Asn Asn Thr Ser Pro Asp Asp Val Val Ile Cys Gln Ala							
219	695	700		705		710		
221	ttg att gac tac atc aag agt gat ttt gat ctt ggt gtt tat tgg aaa	2393						
222	Leu Ile Asp Tyr Ile Lys Ser Asp Phe Asp Leu Gly Val Tyr Trp Lys							
223		715		720		725		
225	acc ctg aat gag aac gga ata aca aaa gag cgt ctt ttg agt tat gac	2441						
226	Thr Leu Asn Glu Asn Gly Ile Thr Lys Glu Arg Leu Leu Ser Tyr Asp							
227		730		735		740		
229	cgt gct atc cat tct gaa ccg aat ttt aga gga gat caa aag aat ggt	2489						
230	Arg Ala Ile His Ser Glu Pro Asn Phe Arg Gly Asp Gln Lys Asn Gly							
231		745		750		755		
233	ctt ttg cgt gat tta ggt cac tat atg aga aca ttg aag gct gtt cat	2537						
234	Leu Leu Arg Asp Leu Gly His Tyr Met Arg Thr Leu Lys Ala Val His							
235		760		765		770		
237	tca ggt gca gat ctt gag tct gct att gca aac tgc atg ggc tac aaa	2585						
238	Ser Gly Ala Asp Leu Glu Ser Ala Ile Ala Asn Cys Met Gly Tyr Lys							
239	775	780		785		790		
242	act gag gga gaa ggc ttt atg gtt gga gtc cag ata aat cct gta tca	2633						
243	Thr Glu Gly Glu Gly Phe Met Val Gly Val Gln Ile Asn Pro Val Ser							
244		795		800		805		
246	ggc ttg cca tct ggc ttt cag ggc ctc ctc cat ttt gtc tta gac cat	2681						
247	Gly Leu Pro Ser Gly Phe Gln Gly Leu Leu His Phe Val Leu Asp His							
248		810		815		820		
250	gtg gaa gat aaa aat gtg gaa act ctt ctt gag gga ttg cta gag gct	2729						
251	Val Glu Asp Lys Asn Val Glu Thr Leu Leu Glu Gly Leu Leu Glu Ala							
252		825		830		835		
254	cgt gag gag ctt agg ccc ttg ctt ctc aaa cca aac aac cgt cta aag	2777						
255	Arg Glu Glu Leu Arg Pro Leu Leu Leu Lys Pro Asn Asn Arg Leu Lys							
256		840		845		850		
258	gat ctg ctg ttt ttg gac ata gca ctt gat tct aca gtt aga aca gca	2825						
259	Asp Leu Leu Phe Leu Asp Ile Ala Leu Asp Ser Thr Val Arg Thr Ala							
260	855	860		865		870		
262	gta gaa agg gga tat gaa gaa ttg aac aac gct aat cct gag aaa atc	2873						
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268				890					895					900			
270	gat	aat	gaa	gat	ctt	gtt	tat	tgc	ttg	aag	gga	tgg	aat	caa	gct	ctt	2969
271	Asp	Asn	Glu	Asp	Leu	Val	Tyr	Cys	Leu	Lys	Gly	Trp	Asn	Gln	Ala	Leu	
272			905					910					915				
274	tca	atg	tcc	aat	ggt	gga	gac	aac	cat	tgg	gct	tta	ttt	gca	aaa	gct	3017
275	Ser	Met	Ser	Asn	Gly	Gly	Asp	Asn	His	Trp	Ala	Leu	Phe	Ala	Lys	Ala	
276		920					925					930					
278	gta	ctt	gac	aga	atc	cgt	ctt	gca	ctt	gca	agc	aag	gca	gag	tgg	tac	3065
279	Val	Leu	Asp	Arg	Ile	Arg	Leu	Ala	Leu	Ala	Ser	Lys	Ala	Glu	Trp	Tyr	
280	935					940				945						950	
282	cat	cac	tta	ttg	cag	cca	tct	gcc	gaa	tat	cta	gga	tca	atc	ctt	ggg	3113
283	His	His	Leu	Leu	Gln	Pro	Ser	Ala	Glu	Tyr	Leu	Gly	Ser	Ile	Leu	Gly	
284					955				960						965		
286	gtg	gac	caa	tgg	gct	ttg	aac	ata	ttt	act	gaa	gaa	att	ata	cgt	gct	3161
287	Val	Asp	Gln	Trp	Ala	Leu	Asn	Ile	Phe	Thr	Glu	Glu	Ile	Ile	Arg	Ala	
288			970						975					980			
290	gga	tca	gca	gct	tca	tta	tcc	tct	ctt	ctt	aat	aga	ctc	gat	ccc	gtg	3209
291	Gly	Ser	Ala	Ala	Ser	Leu	Ser	Ser	Leu	Leu	Asn	Arg	Leu	Asp	Pro	Val	
292			985					990					995				
294	ctt	cgg	aaa	act	gca	aat	cta	gga	agt	tgg	cag	att	atc	agt	cca	gtt	3257
295	Leu	Arg	Lys	Thr	Ala	Asn	Leu	Gly	Ser	Trp	Gln	Ile	Ile	Ser	Pro	Val	
296	1000					1005					1010						
298	gaa	gcc	gtt	gga	tat	gtt	gtc	gtt	gtg	gat	gag	ttg	ctt	tca	gtt	cag	3305
299	Glu	Ala	Val	Gly	Tyr	Val	Val	Val	Val	Asp	Glu	Leu	Leu	Ser	Val	Gln	
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304	Asn	Glu	Ile	Tyr	Lys	Lys	Pro	Thr	Ile	Leu	Val	Ala	Asn	Ser	Val	Lys	
305				1035					1040					1045			
307	gga	gag	gag	gaa	att	cct	gat	ggt	gct	gtt	gcc	ctg	ata	aca	cca	gac	3401
308	Gly	Glu	Glu	Glu	Ile	Pro	Asp	Gly	Ala	Val	Ala	Leu	Ile	Thr	Pro	Asp	
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311	atg	cca	gat	gtt	ctt	tca	cat	gtt	tct	gtt	cga	gct	aga	aat	ggg	aag	3449
312	Met	Pro	Asp	Val	Leu	Ser	His	Val	Ser	Val	Arg	Ala	Arg	Asn	Gly	Lys	
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315	gtt	tgc	ttt	gct	aca	tgc	ttt	gat	ccc	aat	ata	ttg	gct	gac	ctc	caa	3497
316	Val	Cys	Phe	Ala	Thr	Cys	Phe	Asp	Pro	Asn	Ile	Leu	Ala	Asp	Leu	Gln	
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319	gca	aag	gaa	gga	agg	att	ttg	ctc	tta	aag	cct	aca	cct	tca	gac	ata	3545
320	Ala	Lys	Glu	Gly	Arg	Ile	Leu	Leu	Leu	Lys	Pro	Thr	Pro	Ser	Asp	Ile	
321	1095				1100				1105					1110			
323	atc	tat	agt	gag	gtg	aat	gag	att	gag	ctc	caa	agt	tca	agt	aac	ttg	3593
324	Ile	Tyr	Ser	Glu	Val	Asn	Glu	Ile	Glu	Leu	Gln	Ser	Ser	Ser	Asn	Leu	
325			1115					1120					1125				
327	gta	gaa	gct	gaa	act	tca	gca	aca	ctt	aga	ttg	gtg	aaa	aag	caa	ttt	3641
328	Val	Glu	Ala	Glu	Thr	Ser	Ala	Thr	Leu	Arg	Leu	Val	Lys	Lys	Gln	Phe	
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VERIFICATION SUMMARY

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L:9 M:270 C: Current Application Number differs, Replaced Application Number

L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date